

- VII. *On the discovery of a species of the Neuropterous family Nemopteridæ in South America, with general considerations regarding the Family.* By ROBERT M'LACHLAN, F.R.S., Pres. Ent. Soc. Lond.

[Read March 4th, 1885.]

THE insects forming the family *Nemopteridæ* (or—as some no doubt prefer to read it—*Nematopteridæ*) have remained until now probably the only important group of Neuroptera that was unknown either in North or South America, and, notwithstanding their marvellous form, they appear to have excited so little interest in America that in the last (8th) edition of Dr. Packard's 'Guide' the family is dismissed with half-a-dozen lines of mention, including the statement that "the species are found in Western Asia and in Northern Africa."\* The form of these insects is so essentially peculiar that I had almost despaired of the possibility of the family occurring in America; still there was always the hope that it might be found in Chili (that land of marvels in insect-productions), and in Chili it has been found. Mr. J. J. Walker, R.N., late of H.M.S. 'Kingfisher,' recently gave me a single example of a species observed by him not uncommonly on a sandy spit at Coquimbo, North Chili, at the end of January and beginning of February. Mr. Walker was (perhaps unfortunately) perfectly familiar with the striking black and yellow species of the sandy shores of South-eastern Europe: he was not aware that the family had not been noticed from America, and, moreover, he paid but little attention to Neuroptera generally; therefore he brought home only this single specimen, which was exhibited by me at the meeting of this Society held on October 1st, 1884.

The family stands much in need of generic subdivision, but unfortunately, with the exception of the European forms, the species are so limited in amount of available

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\* Dr. Packard here overlooks the fact that the typical species are essentially South European, and that the family has long been known to extend into India, Australia, and all over Africa.

materials as to render this a work of difficulty. In 1842,\* however, Rambur, in his *Hist. Nat. Névroptères*, p. 332, essayed a division into three genera, viz:—(1) *Nemoptera* (restricted), for the black and yellow “European” forms, with the mouth strongly produced into a beak; (2) *Halter*, for mostly transparent forms, with the long narrow hind wings more or less dilated towards the tips, and the mouth also produced into a beak; (3) *Brachystoma*, for a single hyaline species, in which the mouth (or front) is short. *Nemoptera* (as restricted) is very natural; *Halter* is somewhat heterogeneous; *Brachystoma* remains practically unknown to me save from the figures in Savigny’s *Descript. de l’Égypte*. Certain species described by Klug (whose work was apparently not known to Rambur), Westwood, &c., such as *N. capillaris*, *jilipennis*, &c., with almost hair-like hind wings, form an especially distinct group or genus.

In considering the new Chilian insect, Rambur’s *Brachystoma* † comes prominently forward, for the front is more decidedly shorter ‡ than is indicated in Savigny’s figure. Unfortunately the palpi, &c., are not in good condition. The insect might be placed provisionally in *Brachystoma*; but that term had previously been used by more than one author (and even in *Insecta*), so I propose for it the generic term *Stenotænia*, and leave it for future decision as to whether Rambur’s *Brachystoma* be absolutely congeneric with it, or otherwise.

#### STENOTÆNIA, n. g.

(= *Brachystoma*, Ramb.?, *nom. præoc.*).

Antennæ rather short, setaceous, but stout, the joints strongly distinct, except towards the apex. Head above narrowly transverse; front very short; cheeks strongly developed, with a very deep fovea on each, in part impinging upon the cheeks, in part on

\* But one year previously Westwood (*Proc. Zoological Soc. Lond.* 1841) had essayed a division into sections, &c., without names.

† F. Walker, *Cat. Brit. Mus. Neuroptera*, pt. ii., placed under *Brachystoma* many species to which his divisional character “*Os vix elongatum*” by no means applies, and which should be transferred to *Halter*, &c.

‡ The ordinarily rostrate front in *Nemopteridæ* usually results from all the parts (front proper, clypeus, and labrum) being greatly elongated (the labrum especially so), and this is exaggerated owing to the labium usually extending beyond the apex of the labrum.

the sides of the true front.\* Clypeus and labrum scarcely distinct, very short and transverse (labium and palpi uncertain). Pronotum short and transverse. Abdomen short and slender. Legs slender; first tarsal joint equalling all the others united, 5th as long as the 2nd to 4th united. Anterior wings transparent (of the form usual in the Old World species with transparent wings), network rather close. Posterior wings very long, narrowly tape-like, not dilated towards the end (but twisted, as is usual), not conspicuously ciliated.

*Stenotænia Walkeri*, n. s.†

Antennæ about 43-jointed, black, the basal two joints yellowish beneath. Head deeply bisinuate posteriorly above; yellow, a broad transverse blackish brown band above, behind the antennæ, a very broad band of same colour in which the antennæ are inserted (leaving only a narrow yellow line between it and the band on the vertex); front yellow; orbits yellow; the posterior portion of the top of the head brownish in the situations. Pronotum yellow; at about one-third of its length the posterior portion is strongly separated from the anterior by an elevated ridge, leaving a depressed transverse collar, slightly clouded with brownish; the posterior portion with a large median, and two smaller lateral, brownish black spots, and the deflexed sides are also broadly of the same colour; there are also numerous small brown dots, whence arise short black hairs. Meso- and meta-nota blackish, with short black hairs, but the inner sides of the lateral lobes of the mesonotum and the scutellum of the metanotum (excepting in its centre) are yellow. Breast and sides of thorax yellow, varied with brown. Abdomen (♂) yellow, above with a narrow black longitudinal median line, and a broad lateral black band (leaving only narrow subdorsal yellow lines); beneath it is wholly yellow, excepting a narrow lateral blackish line below the lateral sutures, and there are numerous small semituberculate black dots, whence spring black hairs: terminal dorsal segment blackish in the middle, clothed with long black hairs, triangularly excised in its posterior margin; appendages stout, cylindrical, very obtuse, somewhat conical if viewed laterally, slightly incurved, yellow, with a blackish spot externally, furnished with long black hairs: terminal ventral segment large, yellow, furnished and fringed with long black hairs, its apical margin rounded; it is deeply concave if viewed from

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\* Savigny's figure indicates precisely analogous foveæ as existing in the Egyptian species on which Rambur founded "*Brachystoma*," and an approach towards a similar structure, but much less pronounced, occurs in others.

† In honour of Mr. J. J. Walker, R.N.

above, and with an appearance as of a large raised tubercle in the middle of the cavity. Legs yellow, with numerous short, but strong, black hairs; coxæ internally, femora internally at the base, and externally at apex, tibiæ externally at apex, tarsal joints at apex, marked with brown; claws piceous, yellowish at base.

Anterior wings long-oval, very obtuse, costal edge straight; vitreous and very shining, but the costal margin to below the radius is broadly smoky grey; pterostigma scarcely indicated; neuration black, set with rather long divaricate black hairs; subcosta and radius conspicuously yellow; costal nervules simple; cellules mostly quadrangular. Posterior wings very narrow, not dilated near the tips, greyish, but the inner margin transparent; subcosta and radius yellow;\* only very faint indications of the usual darker fasciations; marginal veins blackish; the veins and the margins with short black hairs.

Length of body (♂), 11 mm. Expanse of anterior wings, 56 mm. Length of an anterior wing, 26 mm.; greatest breadth of same, 9½ mm. Length of a posterior wing, 58 mm.; breadth of same, 1½ mm.

*Hab.* Coquimbo (*J. J. Walker*).

In *facies* this insect quite agrees with several Old World forms, in which the wings are transparent but have the costal margin tinted.

#### CROCE, n. g.

I propose this generic term for a group of species, usually of small size, characterised by the front being very strongly produced into a slender beak, by short antennæ (which are usually somewhat thickened towards the apex), by transparent anterior wings with very open neuration and usually with a strongly-defined pterostigmatic mark, and especially by long *setaceous* posterior wings, strongly ciliated, in which even the rudiments of neuration are scarcely to be traced.

Taking *N. filipennis*, Westwood, as the type of this genus, I think the following should also be placed

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\* I do not remember to have seen any description of the neuration of the hind wings of *Nemopteridæ*, other than a vague statement that there are two longitudinal veins. In reality there are *three* such veins, *viz.*, the subcosta and radius, which become confluent a little before the apex, as in the anterior, and a third vein equivalent to one of the cubiti. The marginal veinlets are simple (straight or oblique), but in those species in which these wings are very strongly dilated before the apex, such as "*N. dilatata*," "*N. Huttii*," &c., they are complex in the dilated portion.

therein, viz.:—*N. alba*, Oliv., *N. aristata*, Klug, *N. capillaris*, Klug, *N. setacea*, Klug, and *N. pusilla*, Taschenberg.\*

This group of excessively delicate species appears to be especially partial to the desert regions of Africa and Asia.

Of *Nemoptera* as restricted to the four characteristic species that find a place in the "European Fauna," viz., *N. Coa*, L., *N. lusitanica*, Leach, *N. ægyptiaca*,† Rambur (*hebraica*, Westwood), and *N. sinuata*, Oliv., nothing further need be said.

But there remain many species which for the present may find a place in *Halter*, Rambur, species with transparent wings, and the front prolonged into a beak. *Halter*, as defined by Rambur, should have the posterior wings "plus ou moins dilatées" before the apex. If taken literally, several of these remaining species could not in this case rest in this genus. But the form and amount of dilatation varies greatly in different species (and also slightly according to sex). I think it will be found that tarsal characters of some importance exist in several of these species, but my materials are too few.‡

These insects (excepting the well-known European forms) are very difficult to obtain, and I only possess about sixteen species of the family as a whole, which, however, contrasts favourably with other collections I have seen. Less than thirty species are known, and it is very probable that the names by which some of these are represented are really only synonyms.

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\* According to this association of species, *Croce* is practically identical with Westwood's group (Proc. Zool. Soc. Lond. 1841, p. 13), characterised by the words "alæ posticæ setacæ, haud fasciatæ."

† Rambur's *ægyptiaca* was characterised from Savigny's excellent figure. Hagen (Stett. ent. Zeit., 1866, p. 451) identifies it with *sinuata*, Oliv., but erroneously. It is more allied to *lusitanica*, Westwood's *hebraica* (Thes. Ent. Oxon.) was from Syria, whence I also possess the insect, which is undoubtedly that figured by Savigny.

‡ Westwood, in 1841, separated these species into two groups, according to the dilatation, or otherwise, of the posterior wings; but a more radical subdivision, based upon other characters, may become necessary.